The Enhancement of the Alta Valsesia Territorial Potential: A Collaboration-Based Approach Between Academia and Local Actors

Diana Rolando[1(✉)], Alice Barreca[1], Giorgia Malavasi[1], and Manuela Rebaudengo[2]

[1] Architecture and Design Department, Politecnico di Torino, Viale Mattioli 39, 10125 Turin, Italy
{diana.rolando,alice.barreca,giorgia.malavasi}@polito.it
[2] Interuniversity Department of Regional and Urban Studies and Planning, Politecnico di Torino, Viale Mattioli 39, 10125 Turin, Italy
manuela.rebaudengo@polito.it

Abstract. Over the past decade, efforts have been made to enhance the development of Italian fragile areas, to counter social exclusion and population decline. With this purpose, the National Strategy for Inner Areas was launched in 2014, to face the challenges related to the improvement of territorial services. In the wider context of research on the issues of vulnerability and marginalization, the Branding4Resilience-B4R project defined local strategies for revitalizing inner territories and fostering partnerships and collaboration between Academia and local actors. This article describes how the Politecnico di Torino B4R Research Unit has activated a collaboration-based approach with Valsesia Mountain Union since 2020, contextually with the B4R start, and how it has supported the current SNAI strategy definition process. It emphasizes the importance of collaboration in generating insights and proposing initiatives to boost competitiveness and territorial appeal. The results show how the proposed approach supported the sharing of opportunities and threats related to the territorial context, some design ideas deriving from a collaborative process and how the ongoing interaction between Academia and local actors can trigger possible actions connected with uncertainties and risks, based on a data-driven process and not only deriving from political decisions.

Keywords: Inner Areas · Collaboration-based approach · Territorial potential

1 Introduction

The enhancement of Inner Areas was implemented in Italy for over a decade, with the particular aim of reducing the marginalisation and the demographic decline of these territories [2]. The National Strategy for Inner Areas (SNAI) was launched in 2014 and the most fragile areas (peripheral and ultra-peripheral) in the country were identified in relation to the level of offered services and the distance from the nearest service

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2024
O. Gervasi et al. (Eds.): ICCSA 2024 Workshops, LNCS 14819, pp. 17–32, 2024.
https://doi.org/10.1007/978-3-031-65282-0_2

provider centre (pole) [5]. The first programming cycle (2014–2020) was formalised with the identification of 72 Inner Areas to be funded by the Italian government with more than 590 million euros, leading to the implementation of around 1,700 projects over the following years [46]. With the launch of the second programming cycle (2021–2027) [42], a further 43 areas were added, for which the Government allocated an additional 30 million euros.

Alongside the ongoing process, scholars have addressed these same problems over time: *vulnerability*, *fragility* and *marginality*, are frequently used keywords in theoretical and applied research on territorial, suburban and rural areas [16, 17, 19, 21, 25, 47, 48]; otherwise, the issue of *territorial resilience* seems to have been studied only lately [23, 43, 45]. In recent years, researchers have increasingly focused not only on the negative point of view (vulnerabilities) but on *vitality, vibrancy* and *quality of life,* although they appear to be themes studied in relation to urban areas [3, 4, 45].

Taking up the challenge of revitalising and enhancing inner territories, the authors of this paper have addressed these issues in previous studies [32–34, 37] in the context of the B4R - Branding4Resilience research project [9, 11, 22, 31]. B4R is a research project of national interest (PRIN 2017—Young Line), which was funded by the Italian Ministry of University and Research (MUR) for a four-year duration (2020–2024). The project (which is now concluding its planned dissemination actions) was coordinated by Università Politecnica delle Marche (principal investigator: Maddalena Ferretti) and it has involved Università degli Studi di Palermo (local coordinator: Barbara Lino), Università degli Studi di Trento (local coordinator: Sara Favargiotti) and Politecnico di Torino (local coordinator: Diana Rolando) as partners.

In particular, in almost three years of theoretical and field research the Research Unit of Politecnico di Torino (Polito RU), to which the authors belong, had the opportunity to study the area of Alta Valsesia, selected as Focus Area (FA) within the B4R project. In accordance with the goals of the B4R project, the Polito RU triggered a collaboration-based approach between Academia and the Valsesia Mountain Union, which was identified as the most important local actor for the territorial enhancement. This important collaboration has been activated since 2020, contextually with the B4R start, and it has been constantly strengthened in the next years in the context of several activities developed by the Polito RU [32–34, 37]. It is worth mentioning that the Valsesia Mountain Union has been constantly involved and consulted during the first phase of the B4R project, aimed at knowing and analysing the territorial context issues, as well as during a series of co-design activities activated to foster some municipalities' potential.

Furthermore, in June 2022 the Valsesia Mountain Union, together with the Biellese Orientale Mountain Union, achieved the important goal of being identified as one of the new "Inner Areas" (called "Valsesia"), funded in the context of the second SNAI programming cycle by the Italian Minister for Territorial Cohesion (Regional Council Resolution No. 28 of June 21, 2022), aligned with the European programming for 2021–27. This important goal has triggered a series of interesting new synergies between scholars of the Polito RU and the Valsesia Mountain Union and it fostered a further development of the ongoing collaboration towards the "Valsesia" SNAI strategy definition.

This paper offers a comprehensive overview of the collaborative and knowledge-sharing process implemented by the Polito RU which, starting from the results achieved during the 3 phases of the B4R project ("Exploration", "Co-design", "Co-visioning"), has allowed the active participation of the Academy in the SNAI strategy formulation process. The specificity of this work lies in the novelty of the collaboration-based approach (Sect. 2), able to share opportunities and threats related to the territorial context, some design ideas deriving from a collaborative process and possible actions connected with uncertainties and risks. The final objective is to support local authorities in defining priority actions and interventions around which the SNAI strategy can be oriented, correctly managing all existing levels of knowledge in order to make territories more competitive, attractive and lively for new inhabitants, tourists and economic operators. Furthermore, the paper describes the study area (Sect. 3), focusing on the pilot case (the Alta Valsesia Side Valleys), which turn out to be the most fragile areas, compared to the endowment of the main valley with services and its strong winter tourist vocation. The results (Sect. 4) summarise the analytical framework on territorial vulnerability/vibrancy generated by the quantitative and qualitative analyses carried out during the "Exploration" and illustrate the three design concepts and the main challenges, which guided the "Co-design" workshop experience and led to the identification of first design ideas for territorial development. Moreover, the results show the importance of the knowledge structuring process carried out by the Polito RU during the "Co-visioning" phase, which allowed to identify strategic axes, strategies, pilot actions, uncertainties and risks able to support the SNAI strategy construction process.

Possible future developments are discussed in the conclusion, which emphasises the flexibility of use and replicability of the proposed collaboration-based approach also in other contexts.

2 The B4R Methodological Approach for the Alta Valsesia Context

In the context of the B4R project, a methodological approach was developed and based on three main phases as previously presented in authors' publications [16–19] which focus on intermediate results of the research The "Exploration" phase supports the investigation of the territorial contexts from different perspectives, by combining and integrating different quantitative and qualitative tools and methods. The second "Co-design" phase is aimed at proposing actionable transformations of small infrastructures and operative branding actions in selected pilot cases by strictly cooperating with local actors and stakeholders. The third phase aims to develop "Co-visioning" processes in collaboration with local communities, stakeholders and institutions [11].

Each RU of the B4R project has tailored and detailed these phases focusing on the specific territorial context of a selected Focus Area (FA). Figure 1 shows the methodological approach that the Polito RU developed and applied for its FA, the Alta Valsesia territorial context.

Exploration. The "Exploration" phase mainly focused on data analyses and mapping based on data and indicators collected from literature and databases and then included in the knowledge base structured in a Geographical Information System (GIS). The quantitative results deriving from data elaborations were integrated with other qualitative

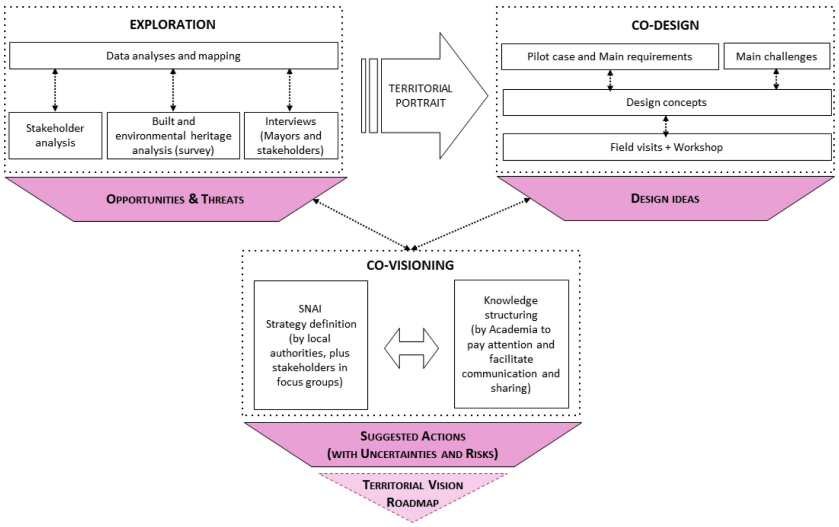

Fig. 1. The B4R methodological approach developed and applied by the Polito RU for the Alta Valsesia, in the general framework of the B4R project (Source: Authors' elaboration)

analyses: a stakeholder analysis and a survey focused on the built and environmental heritage, completed and verified by directly interviewing stakeholders and the mayors of the municipalities. The integrated results from these analyses supported the identification of a series of opportunities and threats that could orient and guide the process in the following "Co-design" and "Co-visioning" phases.

Co-design. The "Co-design" phase was focused on the organisation of a co-design workshop by assuming the explorative analysis results summed up in a territorial portrait. A paradigmatic pilot case and related requirements were identified within the larger FA, and its main challenges were explicated and shared with the public administrations involved in the process (local actors). Furthermore, the RU, jointly with the local actors, decided on three specific design concepts that guided the co-design workshop activities and the dialogue with the territorial communities during field visits. During the workshop, 3 working groups - made up of B4R researchers and students - worked in parallel on the assigned design concept and developed different design ideas able to foreshadow future enhancement strategies to be implemented in the "Co-visioning" phase.

Co-visioning. The "Co-visioning" phase aimed to implement a process focused on constructing a shared territorial vision and formulating a roadmap for the political decision-makers and local communities of the FA. In the Alta Valsesia context, two parallel processes were conducted in order to develop the Valsesia SNAI strategy. The first process consisted in a series of participatory meetings and focus groups with stakeholders organized by the Valsesia Mountain Union - in conjunction with the Biellese Orientale Mountain Union - and supported by the contribution of professionals. The second process was developed in parallel by the Polito RU to structure the acquired knowledge elements, identify uncertainties and risks and suggest strategic axes and pilot actions for the SNAI strategy definition and implementation.

3 Study Area

The Polito RU applied the methodological approach to the Alta Valsesia FA, which is located in the northern part of Piedmont, in a mountain area including 17 Municipalities (Alagna Valsesia, Alto Sermenza, Balmuccia, Boccioleto, Campertogno, Carcoforo, Cervatto, Cravagliana, Fobello, Mollia, Pila, Piode, Rassa, Rimella, Rossa, Scopa, Scopello). The Alta Valsesia includes numerous side valleys, which take their name from the respective streams that flow into the Sesia river: Val Mastallone and Val Sermenza are the most vulnerable socio-economic contexts since they are characterised by limited accessibility and facilities and by a progressive decline in population and ageing demographics. (Fig. 2).

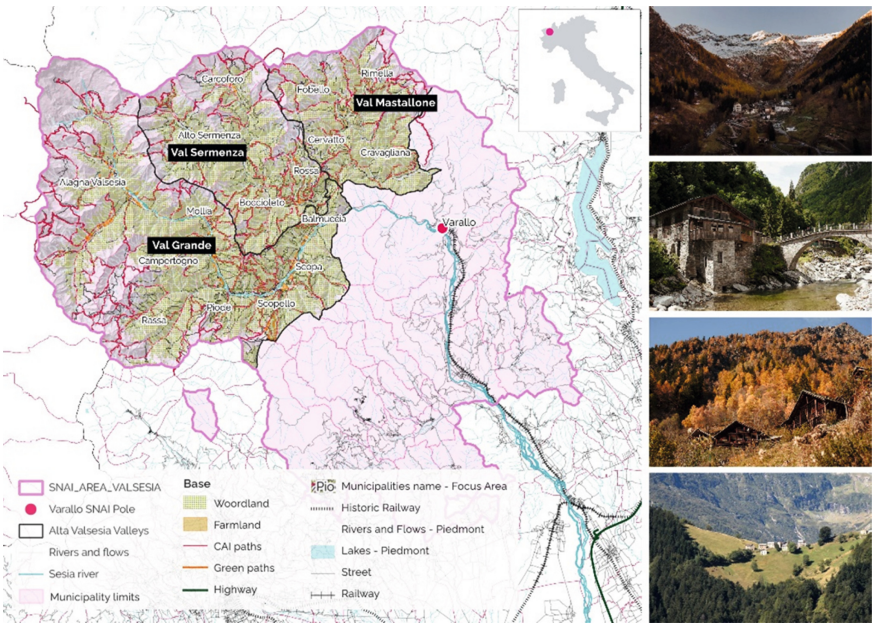

Fig. 2. The Alta Valsesia territory and the new SNAI Valsesia Inner Area (Source: Authors' elaboration; Photos: © Stefano Druetta, 2021)

A relevant territorial development project "Di Valle in Valle", partially funded with PSR funds 2014–2020, was promoted by the Polito RU to enhance the accessibility of the two lateral valleys including six municipalities (Carcoforo, Cervatto, Cravagliana, Fobello, Rimella, Rossa) [41]. This project was aimed to connect the mountain pastures located in the territories of Val Mastallone and Val Sermenza by improving the existing routes and enhancing the mountain environment and traditional Alpine architecture. Pathways and trails with different levels of difficulty cover the entire territory. A network of agro-silvo-pastoral tracks between Rossa and Cervatto serve high-altitude pastures and agricultural farms, connecting the Val Sermenza to the Val Mastallone. On these routes, there are shelters, high-altitude pastures, and votive chapels. The challenge to

increase and encourage the use of these pathways lies in improving and maintaining the trails, with the goal of ensuring maximum safety and accessibility.

The mountain that seems to divide the two side valleys actually connect them through a system of little-trodden pathways and trails and a network of villages, hamlets, mountain pastures, and shelters located at different altitudes (low, medium and high mountains). These areas necessitate restoration and reuse. The built heritage potentially subject to reuse and enhancement is consistent and typologically diverse. Numerous high-altitude pastures and residential properties are nestled within remote hamlets, posing accessibility challenges. Additionally, downstream in the town centres, abandoned properties - including former hotels, theatres, and commercial spaces—often await new opportunities for revitalization.

4 Results

The application of the B4R methodological approach in the Alta Valsesia territorial context allowed the Polito RU to strengthen the collaboration with the Valsesia Mountain Union and reach important results, shared with local authorities and communities along the four-year process, structured in its 3 main phases. In the following sub-sections particular attention was focused on the results achieved during the "Co-design" and "Co-visioning" phase, while the results achieved during the "Exploration" phase are briefly mentioned and referred to previous publications.

4.1 The Exploratory Analysis Main Results

The exploratory analyses conducted during the first year (2020) of the B4R project highlighted certain factors and critical issues in Alta Valsesia.

Over 400 indicators were analysed, and structured data within the GIS were utilized to generate more than 100 thematic maps and graphs, evaluating the territorial potential of the considered 17 municipalities [32, 35]. Furthermore, a stakeholder analysis was performed by applying the Mendelow Power-Interest matrix [26, 29] where more than 100 stakeholders (institutions, third sector organisations, companies, local associations and museums) were analysed and classified in relation to the 8 main objectives of the B4R research project [24].

In parallel, the survey on the built and environmental heritage, addressed to the Mayors of the considered municipalities, highlighted more than 40 assets or sites, both publicly or privately owned. Different asset typologies could be redeveloped to create new enhancement opportunities for the territory: rural buildings, buildings to be totally or partially reused, eco-museums, groups of buildings (hamlets), religious buildings (churches, chapels, oratories), pedestrian and cycle pathways, municipal washhouses [10]. This important knowledge base did not represent a systematic census of assets, but fostered the organisation of a series of interviews with the Mayors and meetings during field visits. These engagements were instrumental in further exploring the condition of assets and in discussing specific needs and potential redevelopment strategies.

All these exploratory analyses were developed by building a fruitful synergy with the Valsesia Mountain Union and allowed the Polito RU to better know and understand some

opportunities, threats, values and vulnerability aspects of the Alta Valsesia territory. In particular, the results revealed that the two lateral valleys (Val Sermenza and Val Mastallone) are particularly fragile areas, yet at the same time, they are strategically important for enhancing the entire Alta Valsesia. Therefore, these more fragile areas inspired the territorial portrait development and were chosen as the pilot case to be assumed during the "Co-Design" phase [10].

4.2 The Co-design Activities and Results

In the second year of the B4R project (2021), the Polito RU, in close collaboration with the Valsesia Mountain Union, decided to focus on Val Sermenza and Val Mastallone and to enhance the partially developed project "Di Valle in Valle". These fragile areas and assets were assumed as pilot case during the "Co-design" phase, facing the main challenge of reactivating and fostering the territorial vibrancy [37, 44] by counteracting demographic contraction, population aging, and the abandonment of built heritage. The Polito RU, jointly with the Valsesia Mountain Union and the six above mentioned municipalities involved as important local actors, defined other challenges, such as:

- Improving the network and the connection with the main cycle pathway (from Varallo to Alagna)
- Ensuring a mixed use (trekking, e-bike,…) and the widest accessibility (Mountain for all)
- Improving the coverage of the mobile network
- Enhancing the built and environmental heritage
- Creating job opportunities for local young people
- Strengthening and diversifying sports and cultural activities (both in winter and in summer)
- Enhancing the use of the Sesia River and its streams
- Increasing the accommodation offer
- Preserving and redeveloping mountain pastures, villages and (mixed uses)
- Promoting energy efficiency (passive houses)
- Promoting transformative tourism
- Offering events and experiences for both young residents and young tourists

Therefore, these challenges were synthesized in the following three design concepts, which emerged from a constructive dialogue (carried on during a series of online meetings) with the Valsesia Mountain Union and guided the working groups' activities during the co-design workshop:

1. "Buğési" that in the local dialect means *walking, arriving, riding*
2. "Alègru!" that in the local dialect means *having fun, connecting, sharing*
3. "Farmési" that in the local dialect means *stopping, contemplating, sleeping*

From March 18 to 21, 2022, at the Varallo Congress Center, local actors collaborated with researchers and students to identify possible new flows, economies, and enhancement strategies to resiliently "vitalize" the two lateral valleys of Alta Valsesia. The first day, during the Opening Conference, the B4R project was publicly presented, specifically highlighting the results achieved by the Polito RU during the first year of studies

and research. The main ongoing projects in the area were then presented through the testimonies of key stakeholders involved in territorial enhancement (such as the Confindustria Novara Vercelli Valsesia, Monterosa 2000, Terre del Sesia Local Action Group, Sesia Val Grande UNESCO Global Geopark, Valsesia Onlus Foundation). The Opening Conference concluded with the presentation of the "Di Valle in Valle" project and the three design concepts aimed to guide the development of revitalising projects. The second day was dedicated to field visits and meetings with the Mayors of the Municipalities. On the third day, separate working groups delved into the challenges and issues related to the visited territories and the three design concepts. Three design ideas emerged from the three working groups (Fig. 3), which were then presented on the last day to the Valsesia Mountain Union and some representatives of the key stakeholders in the area, who positively commented and envisaged real possible future developments (Fig. 3).

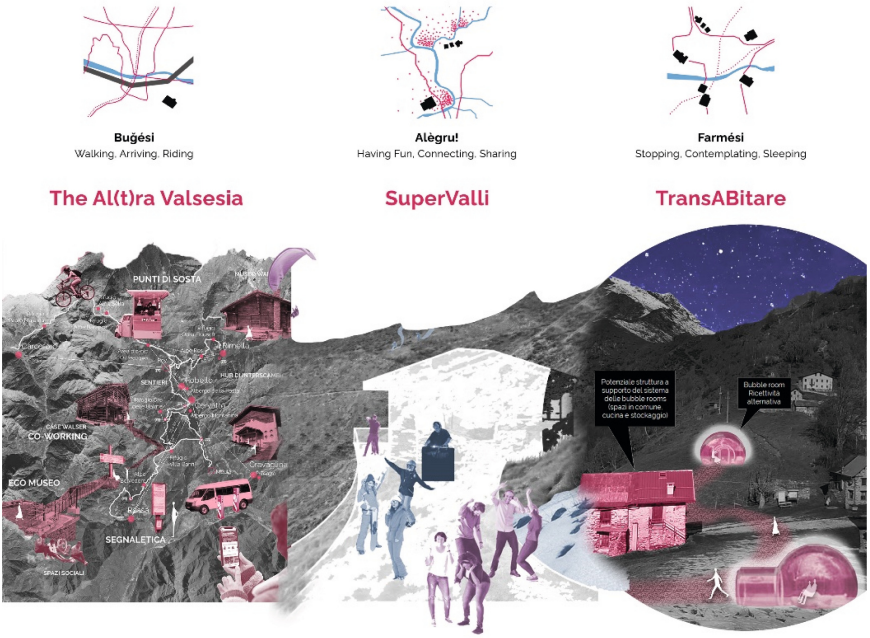

Fig. 3. Co-design workshop results (Source: Authors' elaboration)

"The Alt(r)a Valsesia. Collaborative transvalley intermodality strategy"

The concept "Buğési" addressed the challenge of soft mobility and connection between the valleys, aiming to enhance and make the existing trail network more accessible to attract slow and sustainable tourism. This form of tourism appreciates and respects the natural environment, revitalising currently more inaccessible places and the pathways leading to them. Making the ancient connecting routes between the valleys as accessible and usable as possible, on foot and by bicycle, is a key condition for enhancing the scenic beauty of these areas.

The design idea developed by this first working group was entitled "The Alt(r)a Valsesia. Collaborative transvalley intermodality strategy". It aimed to expand pedestrian and cycling routes, introduce new alternative transportation modes (such as e-bikes, on-call services, electric shuttles, cable cars, Inland Areas Uber, etc.) and integrate new mobility services coordinated through a novel management system in the municipalities of Val Sermenza and Val Mastallone. This idea represents an evolution of the "Di Valle in Valle" project. The five issues at the basis of the design idea are: 1. "Eco-sustainability" for slow tourism and sustainable use of the territory; 2. "Move" thanks to an integrated mobility network; 3. "Discover" through experiences along pathways and cycling; 4. "Arrive" thanks to a widespread distribution system for goods and people; 5. "Understand" through coordinated, open, accessible, integrated, and widespread communication.

"SuperValli. Policies, practices and places for young valleys"

The concept "Alégru!" addressed the challenge of targeting a very specific audience: the young people living or working in the FA and young tourists who predominantly visit the valley during the summer period. The socio-economic and cultural reactivation of these territories is intended to be closely connected to the goal of keeping and attracting new young people, not only as users but also as potential economic operators. The mountain, the river, the villages, and hamlets can offer strategic focal points for a range of activities and experiences - cultural and sports - and opportunities for socialising, leisure, and enjoyment.

The design idea developed by this second working group was entitled "SuperValli. Policies, practices and places for young valleys" and included a series of place-based project proposals for the implementation of innovative policies, social inclusion practices, and initiatives for young people (18–35 years old). These proposals align with national policies aimed at revitalising gathering places in inner areas. The focal points of the project concept are two places, both designed as catalysts for both resident youth and tourists: elevated meeting places for events, entertainment, and hubs for extreme sports (Yuppi-Alpe); meeting places in town centres, in the valley, which could form the nodes of a network of hybrid and flexible spaces hosting diverse functions for education and leisure (Wow-House).

"Transabitare. For a transvalley model of hospitality and living the Alta Valsesia"

The concept "Farmési" addressed the challenge of recovering local typical architecture, converting at-risk properties in villages, hamlets, and mountain pastures into accommodations or mixed-use spaces. These places can become strategic stopping points where the slow tourist can contemplate the landscape, stay overnight, experience innovative activities, or undergo transformative experiences. The goal of increasing accommodation options in the lateral valleys and smaller centers through an alternative high-altitude offering can also be well integrated with the aim of creating a replicable and extendable format (and brand) throughout the entire territory of Alta Valsesia.

The design idea developed by this third working group was entitled "Transabitare. For a transvalley model of hospitality and living the Alta Valsesia" and explored various

forms of residential living and alternative modes of habitation (including temporary ones) to reverse the depopulation trend, especially in "minor" centres, and to trigger entrepreneurial initiatives capable of creating new economic opportunities and local development in Alta Valsesia. The conceptual design was developed by analysing the quality of the local architectural heritage and the different types of residential settlements in the mountainous environment, vertically stratified into three levels (low valley, mid-mountain, and high altitude). In this system, centres at different altitudes acquire different functional and experiential characteristics, in line with "slow tourism" principles. The management of various structures in the various municipalities of the two valleys could be coordinated by the Mountain Union and the GAL (Local Action Group). At the same time, local administrations could support and promote integrated management of vertical systems, involving associations, community cooperatives, Pro Loco (local promotion associations), and industry associations.

4.3 The Co-visioning Process First Results

The key knowledge elements achieved during the "Exploration" and "Co-design" phase supported the last "Co-visioning" phase during the third and fourth years of the B4R project, which temporally coincided with a very important process that affected the Alta Valsesia FA. In 2022, in fact, the Valsesia Mountain Union, together with the Biellese Orientale Mountain Union, achieved the important goal of being identified as one of the new "inner areas" (called "Valsesia"), with over 10 million Euros funds to counteract negative socio-economic trends and promote new economic and local development strategies.

Since December 2022, the Polito RU has been involved in the SNAI strategy definition process, managed by the above mentioned two Mountain Unions with the support of an external consultant and finalised to identify a series of actions to be developed and funded to improve citizen services and local development. For this purpose, the two Mountain Unions organized six Focus Groups to dialogue with a series of local actors and stakeholders and to identify and share with them the main critical issues and opportunities related to the "Valsesia" territory. The activities of each Focus Group were related to a specific theme (1.Mobility and transport; 2.Health and personal care; 3.Agri-food chains and rural development; 4.Tourism enhancement; 5.SMEs development; 6.Education and training) and managed over two sessions. The first sessions focused on identifying critical elements and needs, while the second sessions were aimed at exploring suggestions and indications to be developed within the SNAI strategy. The first sessions were organised from December 2022 to March 2023, while the second sessions in April 2023, including also specific meetings with the Mayors of the Municipalities in order to share the results of the sessions and to collect other issues, needs or suggestions from them. Therefore, in June 2023 the Mountain Unions formed a series of Technical Groups to delve deeper into the refinement and crafting of possible actions to be integrated into the SNAI strategy, thereby advancing the initiative's development.

In parallel, the results from the Focus Groups' and Technical Groups' activities, as well as other ongoing processes in the territory, were monitored by a Control Room, formed by representatives of the Piedmont Region ("Territorial and local development

planning, inner areas and urban areas" Sector), the Province of Vercelli, the two Mountain Unions and their external consultant.

The Valsesia Mountain Union involved the Polito RU as a technical expert both in all Focus Groups' activities and in the Control Room meetings, to share the results deriving from the B4R projects and to participate in the dialogue with the local actors. Moreover, the Polito RU was also involved in the Technical Group "Transports" and in July 2023 suggested a series of possible actions, logically connected with the B4R project results and with the new knowledge elements derived from the six Focus Groups' sessions.

Since December 2022, the activities of the Polito RU were carried on two parallel sides, by actively participating to the above mentioned meetings (on field activities), and by analysing the previous results of the B4R project and elements of the ongoing process and structuring dispersed knowledge elements (internal RU team meetings) (Fig. 4).

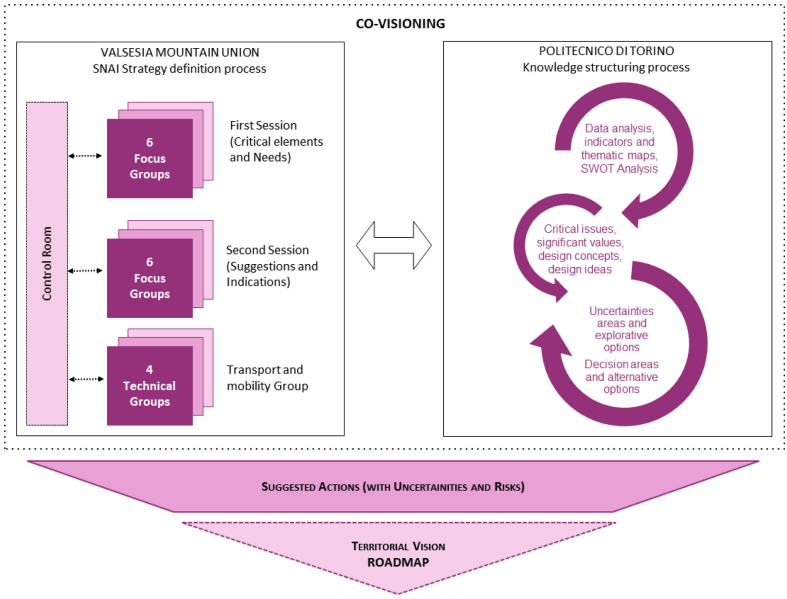

Fig. 4. The Polito knowledge structuring process in the context of the B4R "Co-visioning" phase (Source: Authors' elaboration)

The knowledge structuring process was developed with the support of a decision aid analyst, who actively participated in the RU meetings and progressively aided the group of six researchers to progress in the structured and formal elaboration of the research activities and results in relation with the B4R aims and the SNAI process.

The main B4R activities and results were:

– a survey on the built and environmental heritage, interviews with the Mayors and meetings during field visits, 400 indicators and 100 thematic maps and graphs of the territorial potential of seventeen municipalities of the area, a stakeholder analysis and a SWOT Analysis [7], applied to highlight the most critical issues and significant

values emerged from data analysis and mapping and the interviews with the Mayors (in the exploration phase);
– three design concepts identified together with the Mountain Union ("Buğési", "Alègru!" and "Farmési'") on the basis of the exploratory results and translated into design ideas during the co-design workshop, further developed and described in internal reports and conference presentations [38];
– the elements gradually originated during the first steps of the SNAI process (6 Focus Groups' sessions), which involved the Polito RU while it was operating in the B4R co-visioning phase and strengthened and increased the Polito knowledge base on the Alta Valsesia territorial potential.

All these knowledge elements, useful for establishing a preliminary territorial vision, were organised in a way able to be clearly communicated [28] during the meetings of the Control Room and the "Transport" Technical Group, and to become a road map for future decision processes.

To achieve these results, Problem Structuring Methods were selected to prepare the ground for effective interactions in the context of the SNAI Strategy definition process [6, 28, 39]. The Polito RU applied in particular the Strategic Choice Approach (SCA) [12], which has been applied in various situations (see, for instance [15, 18, 27, 30, 36]). SCA, with the support of its STRAD software tool [13, 14], is normally used to facilitate collaborative actors in managing and reducing the complexity of problem contexts characterised by a high level of uncertainty. In this case, it was used to facilitate a group of analysts in identifying and reducing elements of uncertainty that reduce the possible use of the acquired data and elements of knowledge.

SCA was used to formulate the key issues that have been proposed as main requirements by the Mountain Union and three key issues were formulated: "*How can we guarantee residents those services that an inner area must seek externally?*"; "*How can we retain or attract young people and counteract the trend towards ageing and depopulation?*"; "*How can we attract new and complementary tourism flows?*". Therefore, the application of the *Shaping* mode of SCA aided a technical association between the uncertainty level of each key issue, and related options, and the nature of knowledge about the territory, its potentiality and vulnerability.

Some structuring activities were developed and led to the formulation of a series of Decision Areas, with associated interventions around which the SNAI strategy can be oriented, and to a first debate on possible explorative actions finalised to reduce or control the uncertainty levels by means a structured use of data, information and knowledge.

The Polito knowledge structuring process is currently ongoing, in parallel to the Mountain Union's SNAI Strategy definition process, to formulate a Roadmap including strategic axes, strategies, pilot actions, uncertainties and risks able to support the Valsesia SNAI strategy implementation.

5 Conclusion

Assuming the challenge of being more attractive for new inhabitants, tourists and economic operators, inner territories can benefit from Academia's support for several aspects. For instance, Academia can effectively support them in addressing the lack of

data and information at the municipal level, particularly concerning spatial data. This support can include analysing data to identify opportunities and threats related to the territorial context, developing and sharing coherent design ideas, as well as aiding local actors in making strategic choices in complex decision contexts.

In the context of the B4R research project, the Polito RU implemented a collaboration-based approach, which represented not only a concrete opportunity for knowledge sharing with the Alta Valsesia local actors but also a chance during the definition of the Valsesia SNAI strategy, which is a complex ongoing decision-making process. In the past (and to some extent in this case), the process of defining the strategy and its interventions was mainly carried out at the political level, but the involvement of the Polito RU, providing technical expertise, facilitated enhanced collaboration throughout the process initiated and overseen by the Valsesia Mountain Union. The collaboration-based approach was particularly effective during the Focus Groups' sessions and the Control Room strategic meetings where the Polito RU's vibrancy-oriented vision, developed within the B4R project, was proposed. Since 2020 the collaboration between Academia and local actors has led to the identification of weaknesses/opportunities and to the enhancement of territorial potential by means of design ideas and possible strategic actions to be implemented in the context of the SNAI strategy definition process.

Supporting the correct identification of new territorial opportunities and enhancement strategies is only the first step in the redevelopment of an area: strategies must guarantee equal opportunities for all territories, with particular attention to those that are more fragile. According to the regional milestones, the construction process of the Valsesia SNAI strategy is ongoing. However, the initial drafts of actions and interventions and their impacts (including economic ones) on the territories reveal a limited coherence between proposals, identified vulnerabilities and actual potentials. Upcoming research developments concern:

– in the short term, specific research opportunities for project-specific studies (due to the involvement of Polito RU in the development of the "Di Valle in Valle" project, and in the feasibility study on a new local mobility system, oriented towards the experimentation of a territorial MaaS for inner areas [8, 20]);
– in the longer term, a critical remark of the (last/final) Valsesia SNAI strategy proposal in order to identify weaknesses and risks that need to be checked in order to avoid the results that were not so positive in the first programming cycle [46].

The Valsesia area is currently benefiting from other new specific funding measures. In fact, in recent years several financial potentials have emerged thanks to specific policies and public tenders: in addition to the SNAI opportunity above mentioned, there are numerous funding opportunities deriving from the National Recovery and Resilience Plan (PNRR), bank foundations and initiatives promoted by the "Terre del Sesia" Local Action Group. As a result, numerous projects have been funded and activated in some of the municipalities considered during the research carried out for the B4R project, and their implementation is currently a potential trigger for both the rehabilitation of the heritage and the promotion of new economies.

Certainly, it is worth mentioning that the enhancement of the Valsesia area is possible only if all these funding opportunities are jointly considered and coherently coordinated, avoiding managing them as separate processes. The success of the SNAI strategy cannot

be measured until the process is concluded, but the activation of equally structured processes of management, observation and monitoring of results id desirable, in order to correct the guidelines, and thus guarantee the effectiveness of the policy [1, 40, 46].

Acknowledgments. The authors would like to thank Prof. Maria Franca Norese for having actively participated in the Polito RU co-visioning meetings by sharing her valuable experience in complex decision processes and aiding the group in shaping decision problems and considering related uncertainties and risks. We would like to thank also Cecilia Torriani, Alexandra Stankulova and all other researchers for their work, contribution, and support in the B4R project.

Funding:. "B4R Branding4Resilience. Tourism infrastructure as a tool for the enhancement of small villages through resilient communities and new open habitats" (Project number: 201735N7HP) is a research project of relevant national interest (PRIN 2017—Youth Line) funded by the Ministry of University and Research (MUR) (Italy) for the three-year period 2020–2024.

References

1. Bacci, E. et al.: La sfida dell'accessibilità nelle aree interne: riflessioni a partire dalla Valle Arroscia. TERRITORIO **96**, 77–85 (2021). https://doi.org/10.3280/tr2021-096007
2. Barca, F., et al.: A strategy for inner areas in Italy: definition, objectives, tools and governance. Materiali Uval Series. 31, (2014)
3. Barreca, A., et al.: Assessing social and territorial vulnerability on real estate submarkets. Buildings **7**, 4 (2017). https://doi.org/10.3390/buildings7040094
4. Barreca, A., et al.: Urban vibrancy: an emerging factor that spatially influences the real estate market. Sustainability (Switzerland) **12**(1), 346 (2020). https://doi.org/10.3390/su12010346
5. Centro Studi Formez PA: Rapporto Formez PA 2022. La Strategia nazionale per le aree interne e i nuovi assetti istituzionali, Roma (2022)
6. Curto, R. et al.: A multicriteria decision aid perspective that guides an incremental development of knowledge and fosters relationships and decisions. EURO J. Decis. Process. **10**, 100023 (2022). https://doi.org/10.1016/j.ejdp.2022.100023
7. Doug, L.: Chapter 5. SWOT analysis. In: Handbook of Improving Performance in the Workplace (2009)
8. Eckhardt, J., et al.: MaaS in rural areas - case Finland. Res. Transp. Bus. Manag. **27**, 75–83 (2018). https://doi.org/10.1016/j.rtbm.2018.09.005
9. Favargiotti, S., et al.: Water resources and health tourism in Val di sole: key elements for innovating with nature in the Italian inner territories. Sustainability (Switzerland) **14**, 18 (2022). https://doi.org/10.3390/su141811294
10. Ferretti, M., et al.: Atlante – BRANDING4RESILIENCE. Ritratto di quattro territori interni italiani. LetteraVentidue Edizioni S.r.l., "in press," Siracusa (2024)
11. Ferretti, M. et al.: Branding4Resilience: explorative and collaborative approaches for inner territories. Sustainability (Switzerland) **14**, 18 (2022). https://doi.org/10.3390/su141811235
12. Friend, J.: The strategic choice approach. In: Rosenhead, J. (ed.) Rational analysis for a problematic world: problem structuring methods for complexity, uncertainty and conflict, Chichester (1989)
13. Friend, J.: New directions in software for strategic choice. Eur. J. Oper. Res. **61**, 1–2 (1992). https://doi.org/10.1016/0377-2217(92)90277-G
14. Friend, J.: the STRategic ADviser (2002)

15. Georgiou, I., et al.: The analysis of interconnected decision areas: a computational approach to finding all feasible solutions. Group Decis. Negot. **28**, 3 (2019). https://doi.org/10.1007/s10726-018-9607-5
16. Graziano, P., Rizzi, P.: Resilience and vulnerability in European regions. Scienze Regionali. **19**, 1 (2020). https://doi.org/10.14650/95929
17. Hadjou, L., Duquenne, M.N.: A theoretical and methodological approach of fragile areas: the cases of Greek regions crossed by the Egnatia road. Regional Sci. Inq. **5**, 2 (2013)
18. Han, H., Laiô, S.K.: Decision network: a planning tool for making multiple, linked decisions. Environ. Plann. B. Plann. Des. **38**, 1 (2011). https://doi.org/10.1068/b35153
19. Hanbing, L., et al.: Analytical framework for integrating resources, morphology, and function of rural system resilience—an empirical study of 386 villages. J Clean Prod. **365**, 132738 (2022). https://doi.org/10.1016/j.jclepro.2022.132738
20. Hensher, D.A., Mulley, C.: Hensher, D.A., Mulley, C.: Mobility bundling and cultural tribalism - Might passenger mobility plans through MaaS remain niche or are they truly scalable? Transp Policy (Oxf). **100**, 172–175 (2021). https://doi.org/10.1016/j.tranpol.2020.11.003
21. Hidalgo, D.M., et al.: Uncovering multilayered vulnerability and resilience in rural villages in the pacific: a case study of ono Island, Fiji. Ecol. Soc. **26**, 1 (2021). https://doi.org/10.5751/ES-12197-260126
22. Lino, B., et al.: Re-inhabiting inner areas triggering new regeneration trajectories: the case study of Sicani in Sicily. Sustainability (Switzerland) **14**, 2 (2022). https://doi.org/10.3390/su14020976
23. Liu, S., et al.: Toward classification-based sustainable revitalization: assessing the vitality of traditional villages. Land Use Policy **116**, 106060 (2022). https://doi.org/10.1016/j.landusepol.2022.106060
24. Malavasi, G., et al.: A Stakeholder Analysis to Support Resilient Strategies in the Alta Valsesia Inner Area. Presented at the (2023).https://doi.org/10.1007/978-3-031-37111-0_19
25. Marucci, A., et al.: Marginality assessment: computational applications on Italian municipalities. Sustainability **12**, 8 3250 (2020)
26. Mendelow, A.: Stakeholder mapping. In: Proceedings of the 2nd International Conference on Information Systems. Cambridge, MA, vol. 5, pp. 2 (1991)
27. Norese, M.F., et al.: A methodology to support a concerted approach when the context is non-collaborative. Int. J. Decis. Support Syst. **1**, 4 (2015). https://doi.org/10.1504/ijdss.2015.074545
28. Norese, M.F., et al.: DIKEDOC: a multicriteria methodology to organise and communicate knowledge. Ann. Oper. Res. **325**, 2 (2023). https://doi.org/10.1007/s10479-022-04711-6
29. Olander, S., Landin, A.: Evaluation of stakeholder influence in the implementation of construction projects. Int. J. Project Manage. **23**, 4 (2005). https://doi.org/10.1016/j.ijproman.2005.02.002
30. Paucar-Caceres, A., et al.: Soft situational strategic planning (SSSP): a method and case study of its application in a Brazilian municipality. J. Oper. Res. Soc. **71**, 3 (2020). https://doi.org/10.1080/01605682.2019.1568840
31. Rolando, D., et al.: La valutazione delle potenzialità territoriali attraverso un approccio multidimensionale per le aree interne. LaborEst. **25**, 24–29 (2022)
32. Rolando, D., et al.: Exploring the resilience of inner areas: a cross-dimensional approach to bring out territorial potentials. In: Lecture Notes in Networks and Systems, New Metropolitan Perspectives 2022 International Symposium 5th edition, 25–27 May 2022, Reggio Calabria. Springer (2022). https://doi.org/10.1007/978-3-031-06825-6_18
33. Rolando, D., et al.: From vulnerability to vibrancy: Cross-dimensional indexes for the evaluation of inner areas. Paper submitted to International Journal of Urban and Regional Research (2024)

34. Rolando, D., et al.: Managing knowledge to enhance fragile territories: resilient strategies for the Alta Valsesia area in Italy. In: IFKAD 2022 - Knowledge Drivers for Resilience and Transformation, Lugano, Switzerland (2022)
35. Rolando, D., et al.: Managing knowledge to enhance fragile territories: resilient strategies for the Alta Valsesia area in Italy. In: Knowledge Drivers for Resilience and Transformation. IFKAD (2022)
36. Rolando, D.: Multicriteria decision problem structuring: the strategic choice approach in the context of public projects in Italy. Int. J. Multicriteria Decis. Making **5**, 1–2 (2015). https://doi.org/10.1504/IJMCDM.2015.067942
37. Rolando, D., et al.: The SAVV+P Method: Integrating Qualitative and Quantitative Analyses to Evaluate the Territorial Potential. Presented at the (2023).https://doi.org/10.1007/978-3-031-37111-0_18
38. Rolando, D., et al.: Vibrè. Enhancement strategies to make resilient villages vibrant in Alta Valsesia. In: EURA 2022 Conference "Defrag-Europe: fragility/antifragility at play in contemporary Europe." Milan (2022)
39. Rosenhead, J.: Rational analysis for a problematic world revisited: Problem structuring methods for complexity, uncertainty and conflict (2001)
40. Rossitti, M., et al.: The Italian national strategy for inner areas (SNAI): a critical analysis of the indicator grid. Sustainability (Switzerland). Vol. 13, pp. 12 (2021). https://doi.org/10.3390/su13126927
41. Rotta, A., Boggini, V.: Un progetto per l'unione degli alpeggi dell'Alta Valsesia. In: Ferretti, M. et al. (eds.) Atlante – BRANDING4RESILIENCE. Ritratto di quattro territori interni italiani. Lettera 22, Siracusa (2024)
42. Servizio Studi Camera dei Deputati: La Strategia Nazionale per le Aree Interne (SNAI) (2023)
43. Shiwei, L., et al.: Exploring the associations between urban form and neighborhood vibrancy: a case study of Chengdu, China. ISPRS Int. J. Geoinf. **8**(4), 165 (2019).https://doi.org/10.3390/ijgi8040165
44. Stankulova, A., et al.: Emerging trends in the territorial and rural vulnerability-vibrancy evaluation. a bibliometric analysis. In: International Conference on Computational Science and Its Applications, pp. 277–288 Cham: Springer Nature Switzerland (2023). https://doi.org/10.1007/978-3-031-37111-0_20
45. Stankulova, A. et al.: The quantitative indicator-based evaluation for rural development. A review. Int. Reg. Sci. Rev. (2024)
46. Torriani, C., et al.: Projects and funding in Italian inner areas: learning from the 2014–2020 programming of the SNAI national strategy. In: International Conference on Computational Science and Its Applications, pp. 233–248 Cham: Springer Nature Switzerland (2023). https://doi.org/10.1007/978-3-031-37111-0_17
47. Trovato, M.R., Nasca, L.: An axiology of weak areas: the estimation of an index of abandonment for the definition of a cognitive tool to support the enhancement of Inland areas in Sicily. Land (Basel) **11**, 12 (2022). https://doi.org/10.3390/land11122268
48. Zolin, M.B., et al.: Sustainability in peripheral and ultra-peripheral rural areas through a multi-attribute analysis: the case of the Italian insular region. Sustainability (Switzerland) **12**, 22 (2020). https://doi.org/10.3390/su12229380